Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
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Delete, Delete, Delete	)	GN Docket No. 25-133
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COMMENTS OF ALLIANCE FOR AUTOMOTIVE INNOVATION

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Alliance for Automotive Innovation ("Auto Innovators"),[1] which represents the automotive ecosystem in the United States, including automakers, suppliers, semiconductor companies, battery makers, and technology firms, hereby submits these comments in response to the Federal Communications Commission's ("FCC" or "Commission") Public Notice in the above-captioned proceeding.[2] Adequate access to spectrum is key to enabling the increasing automation, connectivity, and electrification of the modern vehicle fleet. Auto Innovators appreciates that the Commission has undertaken this proceeding to determine whether regulatory changes would better enable the U.S. automotive industry to continue offering innovative and advanced vehicle technologies to the American public.

I. INTRODUCTION AND SUMMARY

The Public Notice presents an excellent opportunity to evaluate whether the Commission's current regulations unnecessarily burden the U.S. automotive industry's ability to

[1] Auto Innovators represents the full automotive industry, including the manufacturers producing most vehicles sold in the U.S., equipment suppliers, battery producers, semiconductor makers, technology companies, and autonomous vehicle developers. Our mission is to work with policymakers to realize a cleaner, safer, and smarter transportation future and to ensure a healthy and competitive automotive industry that supports U.S. economic and national security. Representing approximately 5 percent of the country's GDP, responsible for supporting nearly 10 million jobs, and driving $1 trillion in annual economic activity, the automotive industry is the nation's largest manufacturing sector.

[2] In Re: *Delete, Delete, Delete*, GN Docket No. 25-133, Public Notice, DA 25-219 (released March 12, 2025) ("Public Notice").

transform personal mobility. Given the fact that the U.S. automotive industry underpins the nation's industrial base, it is imperative that spectrum access for automotive applications is a policy priority. The spectrum needs for the automotive industry are growing; innovative automotive use cases will require additional spectrum to both bring new technologies to market and to ensure that existing technologies reach more American consumers. Given its multi-year design and manufacturing cycles and the significant capital expenditures necessary to bring any new product to market, the automotive industry needs the Commission to help create a predictable and durable spectrum regulatory environment that supports cutting-edge automotive technologies. Therefore, Auto Innovators urges the Commission to consider regulatory changes to its rules related to ultra-wideband, market access to non-U.S. Global Navigation Satellite System signals, integrated antenna requirements for 6 GHz very low power ("VLP") devices, and output power increases for Class II permissive changes.

II. MODERNIZING THE COMMISSION'S ULTRA-WIDEBAND RULES

An example where spectrum enables automotive innovation is ultra-wideband ("UWB"). UWB (operating within the 6-8.5 GHz range) currently supports a variety of automotive ranging and sensing functions, including key fobs that consumers use to lock and unlock their vehicles. UWB in this use case works in combination with other technologies to protect vehicles from relay attacks (a form of vehicle theft where the signal from a key fob – which is not near a vehicle – is captured, amplified, and transmitted to another device and then used to unlock and operate a vehicle). The secure ranging that UWB provides, along with its unique centimeter accuracy, helps to counter these attacks.

According to a 2024 Auto Innovators blinded and aggregated survey of its member companies, approximately 20 percent of new vehicles currently use UWB for key fobs. This

percentage is projected to increase with more modern vehicles entering the fleet: nearly half of automotive companies report plans to increase utilization of UWB technology for key fobs over the next five years, with some companies reporting that UWB will support key fobs in nearly two-thirds of their new vehicles by the end of the decade. The survey also reveals that, over the next five years, automotive companies will increase the utilization of UWB technology for a host of other features for consumers, including digital keys, hands-free trunk release, remote parking, driver/occupant detection and status applications, and precise positioning for vehicle charging.

Unfortunately, the World Radiocommunication Conference 2023 decided to study the possibility of identifying portions of the 7/8 GHz band for more International Mobile Telecommunications ("IMT") spectrum. In addition, the National Spectrum Strategy directed the study of the 7/8 GHz band for potential spectrum reallocation to high-power, exclusively licensed cellular uses. UWB operates in the 6-8.5 GHz range at very low power levels that do not interfere with current federal users in the same range, especially considering the 7/8 GHz portion of the band. Deploying high-power, wide-area IMT services in spectrum bands where UWB technologies are already deployed can lead to harmful interference issues that can, in effect, preclude UWB device operation. Auto Innovators maintains that it is important that the Commission protects both the millions of current vehicles with UWB technologies, as well as prospective automotive uses of, and investments in, the 7/8 GHz band for UWB technology. This will ensure the ability of consumers to continue to access and use UWB-enabled vehicle features.

Auto Innovators supports changes to the Commission's Part 15 rules to allow for a variety of ground-based vehicle uses of UWB. Such changes would help ensure that automotive companies and other UWB deployers can continue to provide innovative technologies and services to American consumers. This can be accomplished through revisions to the technical

requirements for hand held UWB systems in 47 CFR §15.519, as well as a definitional change in 47 CFR §15.503. Such changes include:

- In §15.519(a), eliminate the requirement that devices be "hand held"[3] and instead allow for indoor and outdoor operations of "mobile" or "non-fixed" UWB devices;

- In §15.519(a)(1), provide an exemption from the requirements to cease transmission within 10 seconds if an acknowledgement of reception is not received if the device operates with a maximum duty cycle of 5% within 1 second and is not capable of continuous transmission;

- In §15.519(a)(2), permit the use of antennas under 15.519(a)(2) on "mobile UWB devices;"[4]

- In §15.519(c), increase the radiated emissions –
    - by 10dB to -31.3 EIRP in dBm for devices operating between 3,100 MHz and 10,600 MHz; and
    - by 13dB to -48.3 EIRP in dBm for devices operating above 10,600 MHz.

- In §15.503, amend to define "fixed outdoor infrastructure" to mean "permanent installation outdoors on a non-mobile structure."

These changes would increase operational efficiencies at the Commission, by eliminating administrative burdens associated with the regulatory waiver process. In addition, rule modernization in this instance would promote the U.S. automotive industry's competitiveness by accelerating the deployment of new UWB-enabled technologies that can enhance vehicle safety, drive innovation, and meet American consumer demand. Furthermore, these changes could be made without increasing the risk of harmful interference. Auto Innovators encourages the Commission to undertake a process on its UWB-related rules to better reflect technological

[3] Section 15.519 applies to "hand held" UWB systems. 15.519(a) specifies that devices operating under the provisions must be "hand held, i.e., they are relatively small devices that are primarily hand held while being operated and do not employ a fixed infrastructure." In a FAQ, the FCC has said that "a variety of devices" can be authorized under a case-by-case basis if the UWB device is "a small size," "is intended to operate outdoors on a frequent basis," and "is capable of operating without the need for fixed infrastructure installation (*e.g.*, antennas mounted on poles or towers.) The FAQ notes that "[w]here it is not practical for the device to actually be held in a person's hand during operation, it is sufficient to show that the operator can exercise control over the device, or the object to which the device is affixed, while the device is operating."

[4] Section 15.519 currently prohibits the use of antennas on outdoor structures, *e.g.*, antennas mounted on the outside of a building or on a telephone pole, and any fixed outdoors infrastructure.

advances that have rendered the identified rules as inappropriate for current UWB marketplace uses.

III. UPDATING THE COMMISSION'S PROCESS ON MARKET ACCESS TO NON-U.S. GNSS SIGNALS

Positioning, navigation, and timing ("PNT") services provided by Global Navigation Satellite System ("GNSS") signals play an increasingly vital role in transportation. Modern vehicles incorporate several functions and features that depend on PNT services. For example, PNT services support embedded navigation and mapping features in vehicles, including route optimization, real-time traffic information, and the identification of points of interest. PNT services also facilitate location-based connectivity services for vehicle occupants, including parking location reminders, real-time weather and road condition information, and stolen vehicle location features. In addition, PNT services enable technologies that can link third-party service providers with a consumer's vehicle, such as the ability to dispatch emergency responders to traffic accidents or guide roadside assistance providers to disabled vehicles. PNT services also connect Americans with mobility services, including rideshare and carsharing.

Perhaps most critical is the use of PNT services to support next-generation vehicle safety technologies. GNSS signals can be used to supplement wheel odometry and inertial measurements to detect and control sideslip and skidding through selective braking. Level 2 automated vehicles use GNSS for active safety features like lane keep assistance. Level 2 automated and Level 3-5 autonomous vehicles can use GNSS signals to supplement perception information from external sensors to precisely localize the vehicle to a map, as well as for on-board sensor synchronization using Coordinated Universal Time-derived from GNSS. In addition, vehicle-to-vehicle communication requires PNT services to derive vehicle location and to affix timestamps to safety-related messages.

The availability, resiliency, redundancy, and accuracy of PNT services is critical to the U.S. automotive industry. To prevent the risk of having a single point of failure, as well as to promote U.S. technological leadership in applications involving space-based PNT services, Auto Innovators recommends that the Commission review its rules requiring licensing of non-Federal receive-only equipment operating with non-U.S. satellite systems.[5] The current process to obtain a waiver is lengthy and complex; it was over three years between the European Commission's waiver request for Galileo and the Commission commencing the public notice and comment process on the request. In addition, the National Telecommunications and Information Administration had to complete an analysis on the waiver request before it provided its recommendation to the Commission. The current rules were designed for large, stationary infrastructure, not ubiquitous consumer products like motor vehicles. In addition, GNSS-enabled products today are not limited by country or geography; they are designed for global markets. Auto Innovators contends that the Commission should review these rules to align with current market and technological realities regarding GNSS-enabled products and devices.

IV. REMOVAL OF INTEGRATED ANTENNA REQUIREMENTS FOR 6 GHZ VERY LOW POWER DEVICES

The Commission recently issued its final rule to expand unlicensed VLP device operation to the entire 6 GHz band, so that such devices will operate with the same power levels and other technical and operational requirements throughout the band. This consistency in technical and operational requirements also seeks to prevent harmful interference to the licensed services that operate in the 6 GHz band. Unfortunately, the regulations require VLP devices to have an integrated antenna, presumably with small mobile devices in mind. However, this requirement

[5] See 47 C.F.R. § 25.131(J)(1); § 25.137.

does not account for how the automotive industry builds vehicles with remote modules and external antennas. The Office of Engineering and Technology ("OET") is aware of this issue and recommended that affected companies file an exemption request.

Auto Innovators proposes that the Commission remove the requirement for integrated antennas from the 6 GHz device category for U-NII bands. In addition, the Commission should modify its rules to allow VLP devices inside of vehicles where the modem and the antenna may not be in the same housing or encasement, but the modem, antenna, and any associated wiring are inaccessible to users. These changes would eliminate the need for a waiver for every automotive application. The only equipment class category that is acceptable for automotive use in the 6 GHz band is VLP. However, the requirement (including answers provided via the OET Knowledge Base) that an antenna cannot be external, even if the antenna is not accessible, professionally installed, etc., excludes most automotive applications.

V. RECOMMENDED INCREASES TO OUTPUT POWER FOR CLASS II PERMISSIVE CHANGES

According to 47 C.F.R. §2.1043, a change to the maximum power or field strength ratings for certified equipment requires a full new application unless there is a permissive change under subsection (b)(3). In addition, subsection (b)(2) only allows degradation in performance when applying a Class II permissive change. Auto Innovators proposes that the Commission allow for an improved maximum power or field strength ratings (within the limits of the applicable rules). For Class III permissive changes, modifications to the software of a software defined radio transmitter can include improved maximum output powers. However, for previously certified products, Class II permissive changes do not allow improved maximum output powers. This poses a regulatory burden on automotive companies because reapplication

leads to additional effort, such as changing the FCC identification number, all related documentation, labeling, etc.

VI. CONCLUSION

The automotive industry remains positioned to play a central role in advancing America's economic and national security interests, and the modernization of Commission rules can incentivize further technological innovation by automotive companies. This is a recipe for American leadership and global competitiveness that will enhance vehicle safety, create manufacturing jobs, and meet consumer expectations. Auto Innovators looks forward to partnering with the Commission on deregulatory efforts that can accelerate the deployment of advanced automotive technologies.

Respectfully submitted,

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